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Ready

EAST - [Untitled1:1]

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Ready

stadium 100 is a football field 102. Surrounding football field 102 are the seats 104 for the fans. Between seats 104 and playing field 102 is a retaining wall 106. On retaining wall 106 is an advertisement AD1. For example purposes only, assume that a particular television broadcaster has selected four targets for enhancement. The first target is an advertisement AD1 to be replaced by another advertisement. The second target is a portion of the playing field which is to receive an advertisement. For this example, assume that the broadcaster wishes to place an advertisement in the end zone 108 of the football field. A third target is an area above the stadium. That is, the television broadcaster may wish that when a camera is pointed to the top of the stadium, the viewers sees an advertisement suspended above the stadium. A fourth target is a location on the playing field 102 representing where a team must cross in order to get a first down. Although the television broadcaster may be enhancing the video image as discussed above, the spectators and players at the stadium would not see any of these enhancements, rather they would view the stadium as depicted in FIG. 1.

#### Detail Description Paragraph - DETX (19):

[0039] Preferably, determining the position of the target is a two-step process. In the first step (step 308) a rough estimate is made based on the pan, tilt and zoom values and in the second step the estimate of the target's position is refined (step 310). In regard to step 308, by knowing where the camera is pointed and the target's three dimensional location, the target's position in the video frame can be estimated. The accuracy of step 308 is determined by the accuracy of the pan/tilt/zoom sensors, the software used to determine the field of view and the stability of the platform on which the camera is located. In some alternatives, the field of view sensor equipment may be so accurate that the position of the target is adequately determined and step 310 is not necessary. In other instances, the pan, tilt and zoom data only provides a rough estimate 308 (e.g a range of positions or general area of position) and step 310 is needed to determine a more accurate position.

#### Detail Description Paragraph - DETX (27):

[0047] FIG. 7 shows an alternative embodiment of the present invention which utilizes electromagnetic transmitting beacons at or near a target. The beacons transmit an electromagnetic signal not visible to the human eye. Electromagnetic waves include light, radio, x-rays, gamma rays, microwave, infrared, ultraviolet and others, all involving the propagation of electric and magnetic fields through space. The difference between the various types of electromagnetic waves are in the frequency or wave length. The human eye is sensitive to electromagnetic radiation of wave lengths from approximately 400-700 nm, the range called light, visible light or the visible spectrum. Thus, the phrase "electromagnetic signal not visible to a human eye" means an electromagnetic wave outside of the visible spectrum. It is important that the signal transmitted from the beacon is not visible to human eye so that the visual appearance of the target will not be altered to those people attending the live event. In one embodiment, the beacon is an electromagnetic transmitter which includes infrared emitting diodes. Other sources which transmit electromagnetic waves may also used, for example, radio transmitters, radar repeaters, etc.

#### Claims Text - CLTX (10):

9. The method according to claim 1, further including the steps of: capturing second video using a second camera; said second video including said target, said second camera zoomed such that said target substantially fills most of said second camera's field of view; detecting an occlusion of said target in said second video; and using said detection of said occlusion from said second video to determine where said occlusion is positioned in said second video.

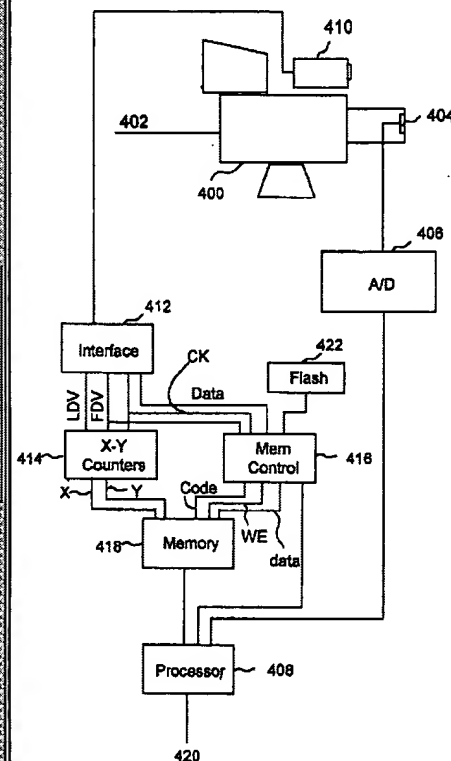


FIG. 7